Project Name: **Soil Studies in the Lower Namoi Valley**
Project Code: **EDGEROI** **Site ID:** **na017** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (QLD)**

Site Information

Desc. By: D. McGarry
Date Desc.: 23/02/88
Map Ref.: Sheet No. : 8837_S 1:50000
Northing/Long.: 6645900 AMG zone: 55
Easting/Lat.: 769660 Datum: AGD66
Locality: University of Sydney, I.A.Watson Research Farm
Elevation: 220 metres
Rainfall: No Data
Runoff: No Data
Drainage: No Data

Geology

ExposureType: Undisturbed soil core
Geol. Ref.: No Data
Conf. Sub. is Parent. Mat.: No Data
Substrate Material: No Data

Land Form

Rel/Slope Class: No Data
Morph. Type: No Data
Elem. Type: Terrace flat
Slope: 0 %
Pattern Type: No Data
Relief: No Data
Slope Category: Level
Aspect: No Data

Surface Soil Condition (dry): Self-mulching, Recently cultivated

Erosion:

Soil Classification

Australian Soil Classification:
N/A
ASC Confidence:
Confidence level not specified
Mapping Unit: N/A
Principal Profile Form: Ug5.16
Great Soil Group: Grey clay

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11p	0 - 0.1 m	Very dark greyish brown (10YR3/2-Moist); Very dark greyish brown (10YR3/2-Dry); ; Medium clay; Moderate grade of structure, <2 mm, Granular; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 8 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.25 m	Very dark greyish brown (10YR3/2-Moist); ; Medium clay; Weak grade of structure; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 8 (pH meter);
A13	0.25 - 0.37 m	Very dark greyish brown (10YR3/2-Moist); ; Medium clay; Weak grade of structure; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 8 (pH meter); Abrupt, Smooth change to -
2A1	0.37 - 1.05 m	Very dark grey (10YR3/1-Moist); ; Medium heavy clay; Moderate grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 10-20 mm, Angular blocky; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Clear, Smooth change to -
2B21	1.05 - 1.9 m	Dark greyish brown (10YR4/2-Moist); , 10YR21, 2-10% , 15-30mm, Distinct; Medium heavy clay; Weak grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 10-20 mm, Angular blocky; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
2B22	1.9 - 2.92 m	Dark greyish brown (10YR4/2-Moist); , 5YR46, 2-10% , 5-15mm, Prominent; Medium heavy clay; Moderate grade of structure, 50-100 mm, Lenticular; Strong grade of structure, 10-20 mm, Angular blocky; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Few (2 - 10 %), Calcareous, Medium (2 - 6 mm), Nodules; Field pH 8.5 (pH meter);

Morphological Notes

A11p Top 37cm is quite structureless (apart from the top 10cm which is quite granular) and quite homogeneous. Beneath, it is strongly structured. As such it is similar to na013, so again recent flood deposition is suspected. The profile is moist

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A12 to 80cm. The faunal material in layer na01706 begins at 170cm and is mainly infilled faunal channels. In the last 15cm (i.e., at 277cm) of the profile there is a clear break to a dark, densely carbonated layer, a bit disturbed in this core

A13 .

Observation Notes

Parent Rock: alluvial sediment, clay, parna on third fan

Site Notes

Very loose, deep topsoil, with wheat residue (well chopped up) spread all over.

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations				Exchangeable Acidity	CEC	ECEC	ESP
			Ca	Mg	K	Na				
m		dS/m	Cmol (+)/kg							%
0 - 0.02	8.01A	0.115A	27.05B	16.16	2.89	0.75				
0 - 0.1	8.32A	0.226A	23.7B	17.46	1.52	2.06				
0.1 - 0.2	8.5A	0.162A	24.84B	16.68	0.96	2.94				
0.3 - 0.4	8.68A	0.154A	22.06B	18.24	0.71	3.85				
0.7 - 0.8	8.92A	0.309A	18.31B	20.68	1.08	8.33				
1.2 - 1.3	8.84A	0.66A	15.1B	24.61	1.43	9.719999				
2.5 - 2.6	8.88A	0.68A	15.27B	26.55	1.27	11.01				

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size Analysis				
								GV	CS	FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.02	0.1B	1.17C									13.8	59.4
0 - 0.1	0.2B	0.94C	32.2J								16.1	55.3
0.1 - 0.2	<0.1B	0.79C	14.9J								16	55.6
0.3 - 0.4	<0.1B	0.74C	17.6J								15.7	54.2
0.7 - 0.8	0.2B	0.69C	33.5J								15.8	55.2
1.2 - 1.3	1.1B	0.45C	39.5J								17.9	57.4
2.5 - 2.6	1.1B	0.11C	11.5J								14.7	61.8

Depth	COLE	Gravimetric/Volumetric Water Contents						K sat	K unsat
		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar	15 Bar	
m		g/g - m3/m3						mm/h	mm/h
0 - 0.02									
0 - 0.1									
0.1 - 0.2									
0.3 - 0.4									
0.7 - 0.8									
1.2 - 1.3									
2.5 - 2.6									

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Laboratory Analyses Completed for this profile

15A2_CA	Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_K	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_MG	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_NA	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
19B1	Carbonates - manometric
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
5A2	Chloride - 1:5 soil/water extract, automated colour
6B3	Total organic carbon - high frequency induction furnace, infrared
7B1	Water soluble nitrate - automated colour
9B1	Bicarbonate-extractable phosphorus - manual colour
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method